

REMARKS

Pending Claims

Claim 5 has been canceled and claims 1 and 6-9 have been amended. Claims 1-4 and 6-9 are currently pending.

35 U.S.C. §§102 and 103

Applicants request reconsideration of the rejection of claims 1, 3-6, 8 and 9 under 35 U.S.C. § 102(e) as being anticipated by Ueda, U.S. Patent No. 6,538,764; the rejection of claim 2 under 35 U.S.C. § 103(a) as being unpatentable over Ueda in view of Fukuda, U.S. Patent No. 6,226,095; and claim 6 (appears to be claim 7) under 35 U.S.C. §103(a) as being unpatentable over Ueda in view of Nakagiri, U.S. Patent 6,493,099.

The present invention is directed to a printer driver (15a5, Fig. 3) in conjunction with a program for print control (P, Fig. 4). A print data acquisition module (m1, Fig. 19) controls the operation to acquire print data. The printer driver also includes an intermediate file creation module (m2, Fig. 19) that controls the operation to create one or more intermediate files of the acquired print data and these files are temporarily stored into the hard disk (15a, Fig. 1). The intermediate file or files are created so as to be within certain bounds in file size. The environment setting module (m4, Fig. 19) enables the hardware to receive a user-preference setting of the bounds to file size or the bounds can be set depending on the free space in the memory. Also, an actual-data-for-printing creation module (m3, Fig. 19) of the printer driver controls the operation to properly retrieve the contents of the intermediate file

or files, execute image processing and create actual-data-for-printing that is output to the printer (20a, Fig. 1).

Printer 20a of the present invention prints on paper 200 with a print area 201 that is partitioned into a plurality of zones which are referred to as bands 202 (*see* FIG. 10). A plurality of pieces of RGB bitmap data corresponding to the bands 202 are created under the control of the actual-data-for-printing creation module m3. A record list (fig. 16) is created in which the above intermediate files are created to correspond to the plurality of bands 202 so that reference can be made to the intermediate files D2 corresponding to the bands 202. For example, print data D1 may be a set of line data, and then the units to draw U1 to U6 are straight lines and are printed within the print area 201 shown in FIG. 11. In this example, the print data of one page is divided into three intermediate files F11 to F13. Then, a record list R1 as shown in FIG. 13 is created.

Claims 1, 8 and 9 have been amended to include that a record list is created that makes the plurality of intermediate files correspond to a plurality of target zones into which a page print area is partitioned. By referring to the record list for each target zone and reading the intermediate files corresponding to each target zone into the memory, the actual-data-for-printing for each target zone is created.

Ueda is concerned with printing wherein the total size of the full image data for one page is about 4 MB whereas the RAM 13 of the printer (2500) has a small capacity of 2 MB (*see*, col. 44, lines 20-24 of Ueda). Thus, the memory has a size or capacity (2 MB) which is smaller than that (about 4 MB) required for storing one-page data. Therefore, banding buffer memories 903 and 904, each having a size which is 1/16 the size of the one-page data are

used alternately such that, while dot data developed in one of the banding buffer memories is being read and sent to the printing section 17, data of the next band is developed in the other of the banding buffer memories. This operation is repeated to conduct processings for printing one-page data. *See*, col. 44, lines 30-39 of Ueda.

On the other hand, the print data of the present invention may comprise a plurality of pages to print, so it is divided so that page-by-page printing can be performed and the intermediate files (D2) of divisional print data are created. For example, this may require that an intermediate file of print data of 1 gigabytes (GB), or 1024 megabytes (MB) be created. That is, when printing is carried out with a printer for large-size prints, a huge amount of print data is sometimes created and the size of the intermediate file becomes as large as 1 or 2 gigabytes. In such a case, attempts to print sometimes fail as a result of system restrictions, for example, insufficient space of the RAM into which the contents of the intermediate file must be read or as a result of the operating system being incapable of handling the RAM of two gigabytes or more. *See*, page 26, lines 9-12 of the specification.

According to the conventional methods of printing, the intermediate file is not divided. In the preferred embodiment of the invention, however, the intermediate file is divided into parts and the large amount of print data can be handled as follows. If the bounds of the intermediate file size are set at 256MB, the print data is divided into at least four intermediate files: $1024/256 = 4$. Then, the intermediate files that are created are of a manageable size for the operating system, etc. *See*, page 26, lines 12-16 of the specification.

In the rejection based on Ueda, the disclosure of bands 1001, etc., as shown in Fig. 14 are relied upon as the intermediate files that are claimed by Applicants. However, with

reference to Fig. 6 of the present invention, the print data that is created into the intermediate files is converted into bitmap data that is then further divided into bands or zones. Ueda does not disclose both intermediate files and bands or zones, as in the present invention.

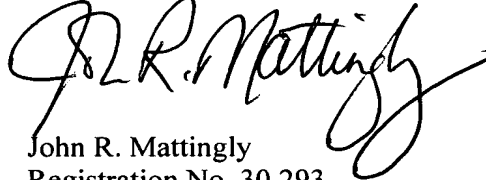
Further, Ueda does not disclose the claimed record list that makes the plurality of intermediate files correspond to a plurality of target zones into which a page print area is partitioned. In the present invention, the actual-data-for-printing for each target zone is created by referring to the record list for each target zone and reading the intermediate files corresponding to each said target zone into the memory. The rejection of claim 5 relies upon the display list of Fig. 16B in Ueda as the record list. However, the display list of Ueda refers to the bands or zones, not to any files that are equivalent to the intermediate files of the present invention. Therefore, the reference does not anticipate the invention as claimed in claims 1, 3, 4, 6, 8 and 9.

The secondary references of Fukuta and Nakagiri do not overcome the deficiency noted in Ueda and therefore none of these references in combination with Ueda is sufficient to render claims 2 and 6 (claim 7) unpatentable under 35 U.S.C. § 103(a). Further, each of these claims should also be found to be patentable for depending from a base claim asserted to be allowable for the foregoing reasons.

• **Conclusion**

In view of the foregoing amendments and remarks, Applicants contend that the above-identified application is now in condition for allowance. Accordingly, reconsideration and reexamination are requested.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "J.R. Mattingly", with a large, stylized flourish extending from the end of the name.

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